Process: MIG (GMAW)
Flux cored (FCAW)

Arc Welding Power Source and Wire Feeder

Machine Number: _____

Where Purchase: _____

Date of purchased: _____

MIGSONIC145
OWNER'S MANUAL

www.weldking.com

Table of Contents

SECTION 1 SAFETY PRECAUTIONS 1
SECTION 1 CONSIGNES DE SÉCURITÉ 1
1-1. Symbol Usage 1
Symboles utilisés 1
1-2. Arc welding Hazards 1
Dangers relatifs au soudage à l'arc 1
1-3. Safety Standards Normes de sécurité 6
1-4. EMF Information EMF Information 6
SECTION 2 INSTALLATIONS 7
2-1. Welding power source specifications 7
2-2. Connection diagram 8
2-3. installing welding torch 10
2-4. Ground cable installation 11
2-5. Process/Polarity Table 11
2-6. Install procedure 11
2-7. Electric service guide 12
2-8. Extension Cable Selection Chart 13
SECTION 3 OPERATION 14
3-1 Front panel Layout 14
3-2 Operation 15
3-3 Voltage/Wire speed selection chart 16
SECTION 4 TROUBLE SHOOTING 17
SECTION 5 MAINTENANCE 22
5.1. Maintenance 22
5.2. Safety precaution 23
SECTION 6 PARTS LIST 25
SECTION 7 WARRANTY POLICY 32
SECTION 8 AUTHORIZED SERVICE CENTER 33

SECTION 1 SAFETY PRECAUTIONS

SECTION 1 CONSIGNES DE SÉCURITÉ

1-1. Symbol Usage
Symboles utilisés

Means Warning! Watch Out! There are possible hazards with this procedure! The possible hazards are shown in the adjoining symbols.

Symbole graphique d'avertissement ! Attention ! Cette procedure comporte des risques possibles ! Les dangers éventuels sont représentés par les symboles graphiques joints.

This group of symbols means Warning! Watch Out possible ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards

Ce groupe de symboles signifie Avertissement! Attention! Risques d'ÉLECTROCUTION, ORGANES MOBILES et PARTIES CHAUDES. Consulter les symboles et les instructions afferents ci-dessous concernant les mesures à prendre pour supprimer les dangers.

▲ **Marks a special safety message.**
Indique un message de sécurité particulier

Means "Note"; not safety related.

☞ ***Signifie NOTE ; n'est pas relatif à la sécurité.***

1-2. Arc welding Hazards
Dangers relatifs au soudage à l'arc

✶ **The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard.**

✶ **Only qualified persons should service, test, maintain, and re- pair this unit.**

✶ **During servicing, keep everybody, especially children, away**

✶ **Les symboles représentés ci-dessous sont utilisés dans ce manuelpour attirer l'attention et identifier les dangers possibles. Enprésence de l'un de ces symboles, prendre garde et suivre lesinstructions afférentes pour éviter tout risque. Les instructions enmatière de sécurité indiquées ci-dessous ne constituent qu'un sommaire des instructions de sécurité plus complètes fournies dans les normes de sécurité énumérées dans la Section 2-5. Lire et observer toutes les normes de sécurité.**

✶ **Seul un personnel qualifié est autorisé à installer, faire fonctionner, entretenir et réparer cet appareil.**

✶ **Pendant le fonctionnement, maintenir à distance toutes les personnes, notamment les enfants de l'appareil.**

ELECTRIC SHOCK can kill.

UNE DÉCHARGE ÉLECTRIQUE entraîner la mort.

- Do not touch live electrical parts.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit.
- Additional safety precautions are required when any of the following electrically hazardous conditions are present: in damp locations or while wearing wet clothing; on metal structures such as floors, gratings, or scaffolds; when in cramped positions such as sitting, kneeling, or lying; or when there is a high risk of unavoidable or accidental contact with the workpiece or ground. For these conditions, use the following equipment in order presented: 1) a semiautomatic DC constant voltage (wire) welder, 2) a DC manual (stick) welder, or 3) an AC welder with reduced open-circuit

voltage. In most situations, use of a DC, constant voltage wire welder is recommended. And, do not work alone!

- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
- Always verify the supply ground − check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first − double-check connections.
- Frequently inspect input power cord for damage or bare wiring − replace cord immediately if damaged − bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or poorly spliced cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Do not touch electrode holders connected to two welding machines at the same time since double open-circuit voltage will be present.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal.

SIGNIFICANT DC VOLTAGE exists after removal of input power on inverters.

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.

- Ne pas toucher aux pièces électriques sous tension.
- Porter des gants isolants et des vêtements de protection secs et sans trous.
- S'isoler de la pièce à couper et du sol en utilisant des housses ou des tapis assez grands afin d'éviter tout contact physique avec la pièce à couper ou le sol.
- Ne pas se servir de source électrique à courant électrique dans les zones humides, dans les endroits confinés ou là où on risque de tomber.
- Se servir d'une source électrique à courant électrique UNIQUEMENT si le procédé de soudage le demande.
- Si l'utilisation d'une source électrique à courant électrique s'avère nécessaire, se servir de la fonction de télécommande si l'appareil en est équipé.
- D'autres consignes de sécurité sont nécessaires dans les conditions suivantes : risques électriques dans un environnement humide ou si l'on porte des vêtements mouillés ; sur des structures métalliques telles que sols, grilles ou échafaudages ; en position coincée comme assise, à genoux ou couchée ; ou s'il y a un risque élevé de contact inévitable ou accidentel avec la pièce à souder ou le sol. Dans ces conditions, utiliser les équipements suivants, dans l'ordre indiqué : 1) un poste à souder DC à tension constante (à fil), 2) un poste à souder DC manuel (électrode) ou 3) un poste à souder AC à tension à vide réduite. Dans la plupart des situations, l'utilisation d'un poste à souder DC à fil à tension constante est recommandée. En outre, ne pas travailler seul !
- Couper l'alimentation ou arrêter le moteur avant de procéder à l'installation, à la réparation ou à l'entretien de l'appareil. Déverrouiller l'alimentation selon la norme OSHA 29 CFR 1910.147 (voir normes de sécurité).
- Installer le poste correctement et le mettre à la terre convenablement selon les consignes du manuel de l'opérateur et les normes nationales, provinciales et locales.
- Toujours vérifier la terre du cordon d'alimentation. Vérifier et s'assurer que le fil de terre du cordon d'alimentation est bien raccordé à la borne de terre du sectionneur ou que la fiche du cordon est raccordée à une prise correctement mise à la terre.
- En effectuant les raccordements d'entrée, fixer d'abord le conducteur de mise à la terre approprié et contre-vérifier les connexions.
- Vérifier fréquemment le cordon d'alimentation afin de s'assurer qu'il n'est pas altéré ou à nu, le remplacer immédiatement s'il l'est. Un fil à nu peut entraîner la mort.
- L'équipement doit être hors tension lorsqu'il n'est pas utilisé.
- Ne pas utiliser des câbles usés, endommagés, de grosseur insuffisante ou mal épissés.
- Ne pas enrouler les câbles autour du corps.
- Si la pièce soudée doit être mise à la terre, le faire directement avec un câble distinct.
- Ne pas toucher l'électrode quand on est en contact avec la pièce, la terre ou une électrode provenant d'une autre machine.
- Ne pas toucher des porte électrodes connectés à deux machines en même

temps à cause de la présence d'une tension à vide doublée.

- N'utiliser qu'un matériel en bon état. Réparer ou remplacer sur-lechamp les pièces endommagées. Entretenir l'appareil conformément à ce manuel.
- Porter un harnais de sécurité si l'on doit travailler au-dessus du sol.
- S'assurer que tous les panneaux et couvercles sont correctement en place.
- Fixer le câble de retour de façon à obtenir un bon contact métal-métal avec la pièce à souder ou la table de travail, le plus près possible de la soudure.
- Isoler la pince de masse quand pas mis à la pièce pour éviter le contact avec tout objet métallique.
- Ne pas raccorder plus d'une électrode ou plus d'un câble de masse à une même borne de sortie de soudage.

Il reste une TENSION DC NON NÉGLIGEABLE dans les sources de soudage onduleur quand on a coupe l'alimentation.

- Arrêter les convertisseurs, débrancher le courant électrique et décharger les condensateurs d'alimentation selon les instructions indiquées dans la partie Entretien avant de toucher les pièces.

STATIC (ESD) can damage PC boards.
LES CHARGES ÉLECTROSTATIQUES peuvent endommager les circuits imprimés.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.

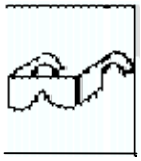
- Établir la connexion avec la arrette de terre avant de manipuler des cartes ou des pièces.
- Utiliser des pochettes et des boîtes antistatiques pour stocker, déplacer ou expédier des cartes PC.

FIRE OR EXPLOSION hazard.

Risque D'INCENDIE OU D'EXPLOSION.

- Do not place unit on, over, or near combustible surfaces.
- Do not service unit near flammables
- Do not overload building wiring − be sure power supply system is properly sized, rated, and protected to handle this unit.

- Ne pas placer l'appareil sur, au-dessus ou à proximité de surfaces inflammables.
- Ne pas installer l'appareil à proximité de produits inflammables.
- Ne pas surcharger l'installation électrique − s'assurer que l'alimentation est correctement dimensionnée et protégée avant de mettre l'appareil en service.



FLYING METAL can injure eyes.

DES PARTICULES VOLANTES peuvent blesser les yeux.

- Wear safety glasses with side shields or face shield during servicing.
- Be careful not to short metal tools, parts, or wires together during testing and servicing.

- Le soudage, l'écaillement, le passage de la pièce à la brosse en fil de fer, et le meulage génèrent des étincelles et des particules métalliques volantes. Pendant la période de refroidissement des soudures, elles risquent de projeter du laitier.
- Porter des lunettes de sécurité avec écrans latéraux ou un écran facial.

HOT PARTS can cause severe burns.

DES PIÈCES CHAUDES peuvent provoquer des brûlures graves.

- Do not touches hot parts bare handed.
- Allow cooling period before working on welding gun or torch

- Ne pas toucher des parties chaudes à mains nues.
- Prévoir une période de refroidissement avant d'utiliser le pistolet ou la torche.

MAGNETIC FIELDS can affect pacemakers.

LES CHAMPS MAGNÉTIQUES peuvent affecter les stimulateurs cardiaques.

- Pacemaker wearers keep away.
- Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.

- Porteurs de stimulateur cardiaque, rester à distance.
- Les porteurs d'un stimulateur cardiaque doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de gougeage ou de soudage par points.

CYLINDERS can explode if damaged.

LES BOUTEILLES peuvent exploser si elles sont endommagées.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow a welding electrode to touch any cylinder.
- Never weld on a pressurized cylinder − explosion will result.
- Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Use the right equipment, correct procedures, and sufficient number of persons to lift and move cylinders.
- Read and follow instructions on compressed gas cylinders, associated equipment, and Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.

Des bouteilles de gaz protecteur contiennent du gaz sous haute pression. Si une bouteille est endommagée, elle peut exploser. Du fait que les bouteilles de gaz font normalement artie du procédé de soudage, les manipuler avec précaution.

- Protéger les bouteilles de gaz comprimé d'une chaleur excessive, des chocs mécaniques, des dommages physiques, du laitier, des flammes ouvertes, des étincelles et des arcs.
- Placer les bouteilles debout en les fixant dans un support stationnaire ou dans un porte-bouteilles pour les empêcher de tomber ou de se renverser.
- Tenir les bouteilles éloignées des circuits de soudage ou autres circuits électriques.
- Ne jamais placer une torche de soudage sur une bouteille à gaz.
- Une électrode de soudage ne doit jamais entrer en contact avec une bouteille.
- Ne jamais souder une bouteille pressurisée − risque d'explosion.
- Utiliser seulement des bouteilles de gaz protecteur, régulateurs, tuyaux et raccords convenables pour cette application spécifique ; les maintenir ainsi que les éléments associés en bon état.
- Détourner votre visage du détendeur-régulateur lorsque vous ouvrez la soupape de la bouteille.
- Le couvercle du détendeur doit toujours être en place, sauf lorsque la bouteille est utilisée ou qu'elle est reliée pour usage ultérieur.
- Utiliser les équipements corrects, les bonnes procédures et suffisamment de personnes pour soulever et déplacer les bouteilles.
- Lire et suivre les instructions sur les bouteilles de gaz comprimé, l'équipement connexe et le dépliant P-1 de la CGA (Compressed Gas Association) mentionné dans les principales normes de sécurité.

FALLING UNIT can cause injury.

LA CHUTE DE L'APPAREIL peut blesser.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit

- Utiliser l'anneau de levage uniquement pour soulever l'appareil, NON PAS les chariots, les bouteilles de gaz ou tout autre accessoire.
- Utiliser un équipement de levage de capacité suffisante pour lever l'appareil.
- En utilisant des fourches de levage pour déplacer l'unité, s'assurer que les fourches sont suffisamment longues pour dépasser du côté opposé de l'appareil.

MOVING PARTS can cause injury.

DES ORGANES MOBILES peuvent provoquer des blessures.

- Keep away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.
- Have only qualified persons remove doors, panels, covers, or guards for maintenance as necessary.
- Reinstall doors, panels, covers, or guards when maintenance is finished and before reconnecting input power.

- S'abstenir de toucher des organes mobiles tells que des ventilateurs.
- Maintenir fermés et verrouillés les portes, panneaux, recouvrements et dispositifs de protection.
- Seules des personnes qualifiées sont autorisées à enlever les portes, panneaux, recouvrements ou dispositifs de protection pour l'entretien.
- Remettre les portes, panneaux, recouvrements ou dispositifs de protection quand l'entretien est terminé et avant de rebrancher l'alimentation électrique.

MOVING PARTS can cause injury.

DES ORGANES MOBILES peuvent provoquer des blessures.

- Keep away from moving parts
- Keep away from pinch points such as drive rolls

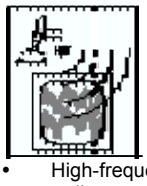
- Ne pas s'approcher des organes mobiles.
- Ne pas s'approcher des points de coincement tels que des rouleaux de commande.

OVERUSE can cause OVERHEATING.

L'EMPLOI EXCESSIF peut SURCHAUFFER L'ÉQUIPEMENT.

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit

- Prévoir une période de refroidissement ; respecter le cycle opératoire nominal.
- Réduire le courant ou le facteur de marche avant de poursuivre le soudage.
- Ne pas obstruer les passages d'air du poste.



H.F. RADIATION can cause interference.

LE SOUDAGE À L'ARC risque de provoquer des interférences.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.

- Le rayonnement haute fréquence (HF) peut provoquer des interférences avec les équipements de radio-navigation et de communication, les services de sécurité et les ordinateurs.
- Demander seulement à des personnes qualifiées familiarisées avec des équipements électroniques de faire fonctionner l'installation.
- L'utilisateur est tenu de faire corriger rapidement par un electrician qualifié les interférences résultant de l'installation.
- Si le FCC signale des interférences, arrêter immédiatement l'appareil.
- Effectuer régulièrement le contrôle et l'entretien de l'installation.
- Maintenir soigneusement fermés les portes et les panneaux des sources de haute fréquence, maintenir les éclateurs à une distance correcte et utiliser une terre et un blindage pour réduire les interférences éventuelles.

READ INSTRUCTIONS.

LIRE LES INSTRUCTIONS.

- Consult the Owner's Manual for welding safety precautions.
- Use only genuine replacement parts

- Lire le manuel d'utilisation avant d'utiliser ou d'intervenir sur l'appareil.
- Utiliser uniquement des pièces de rechange.

1-3. Safety Standards
Normes de sécurité

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihs.com).

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3 (phone: 800−463−6727 or in Toronto 416−747−4044, website: www.csa−international.org).

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, de Global Engineering Documents (téléphone : 1-877-413-5184, site Internet : www.global.ihs.com).

Code for Safety in Welding and Cutting, CSA Standard W117.2, de Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3 (téléphone : 800-463-6727 ou à Toronto 416-747-4044, site Internet : www.csa-international.org).

1-4. EMF Information
EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

Welding current, as it flows through welding cables, will cause electro- magnetic fields. There has been and still is some concern about such fields. However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: “The body of evidence, in the committee’s judgment, has not demonstrated that exposure to power- frequency electric and magnetic fields is a human-health hazard.” However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them.

2. Arrange cables to one side and away from the operator.

3. Do not coil or drape cables around your body.

4. Keep welding power source and cables as far away from operator as practical.

5. Connect work clamp to work piece as close to the weld as possible.

About Pacemakers:

Pacemaker wearers consult your doctor first. If cleared by your doctor, then following the above procedures is recommended

Considérations sur le soudage et les effets de basse fréquence et des champs magnétiques et électriques.

Le courant de soudage, pendant son passage dans les câbles de soudage, causera des champs électromagnétiques. Il y a eu et il y a encore un certain souci à propos de tels champs. Cependant, après avoir examine plus de 500 études qui ont été faites pendant une période de recherché de 17 ans, un comité spécial ruban bleu du National Research Council a conclu : « L’accumulation de preuves, suivant le jugement du comité, n’a pas démontré que l’exposition aux champs magnétiques et champs électriques à haute fréquence représente un risque à la santé humaine ». Toutefois, des études sont toujours en cours et les preuves continuent à être examinées. En attendant que les conclusions finales de la recherché soient établies, il vous serait souhaitable de réduire votre exposition aux champs électromagnétiques pendant le soudage ou le coupage.

Pour réduire les champs magnétiques sur le poste de travail, appliquer les procédures suivantes :

1. Maintenir les câbles ensemble en les tordant ou en les enveloppant.

2. Disposer les câbles d’un côté et à distance de l’opérateur.

3. Ne pas courber pas et ne pas entourer pas les câbles autour de votre corps.

4. Garder le poste de soudage et les câbles le plus loin possible de vous.

5. Connecter la pince sur la pièce aussi près que possible de la soudure.

En ce qui concer ne les sti mulateurs cardiaques

Les porteurs de stimulateur cardiaque doivent consulter leur médecin avant de souder ou d’approcher des opérations de soudage. Si le médecin approuve, il est recommandé de suivre les procédures précédentes

SECTION 2 INSTALLATIONS

2-1. Welding power source specifications

Type	MIGSONIC145	
Power supply	115V/60Hz	230V/60Hz
Phase	1	
Input current @ Maximum output	20	21
Rated input (Kva)	2.3	4.8
Open circuit voltage(v)	44	44
Amperage range(A)	40-110	40-180
Welding voltage(V)	16-18.5	16-21.3
Rated Duty cycle (%)	60	60
Rated welding current(A)	90	145
Wire feed speed(IPM)	31-590 (0.8-15 m/min)	
Dimension(HxWxD)(CM)	52 x25.5 x51	
Weight(KG)	20	
Wire Diameter(MM)	Steel /Stainless Steel Solid: 0.6-0.9mm (0.023-0.035in) Flux cored: 0.8-1.2mm (0.030-0.045in)	
Operating temperature	-4°F to 104°F(-20 to +40°C)	
Storage temperature	-40°F to 185°F (-40°C to +40°C)	

Table 2.1

⚠ CAUTION

WELDING LONGER THAN RATED DUTY CYCLE CAN DAMAGE GUN AND VOID WARRANTY.

2-2. Connection diagram

MIGSONIC145 (115v input)

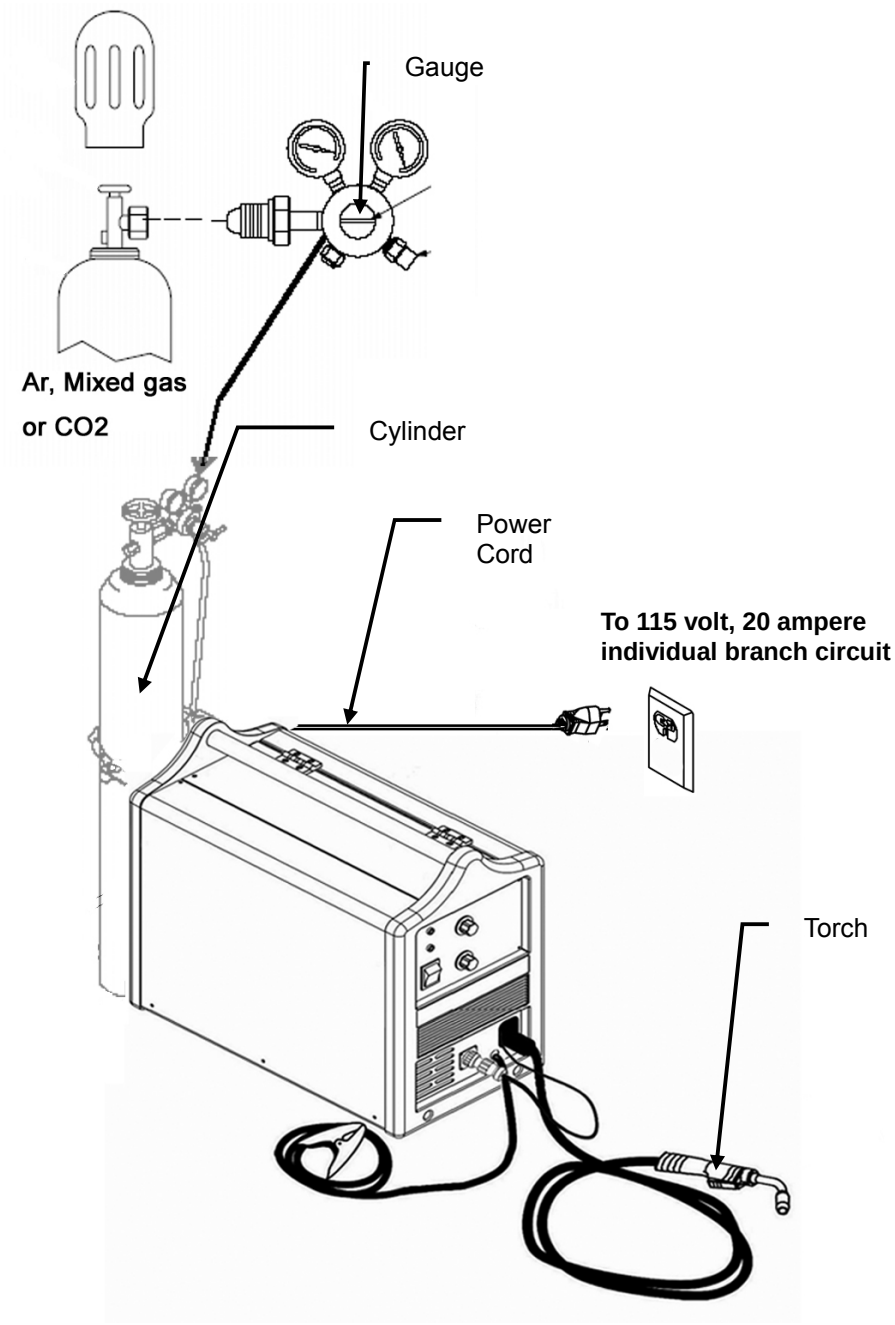


Figure 2.1

MigSonic145(208/230V input)

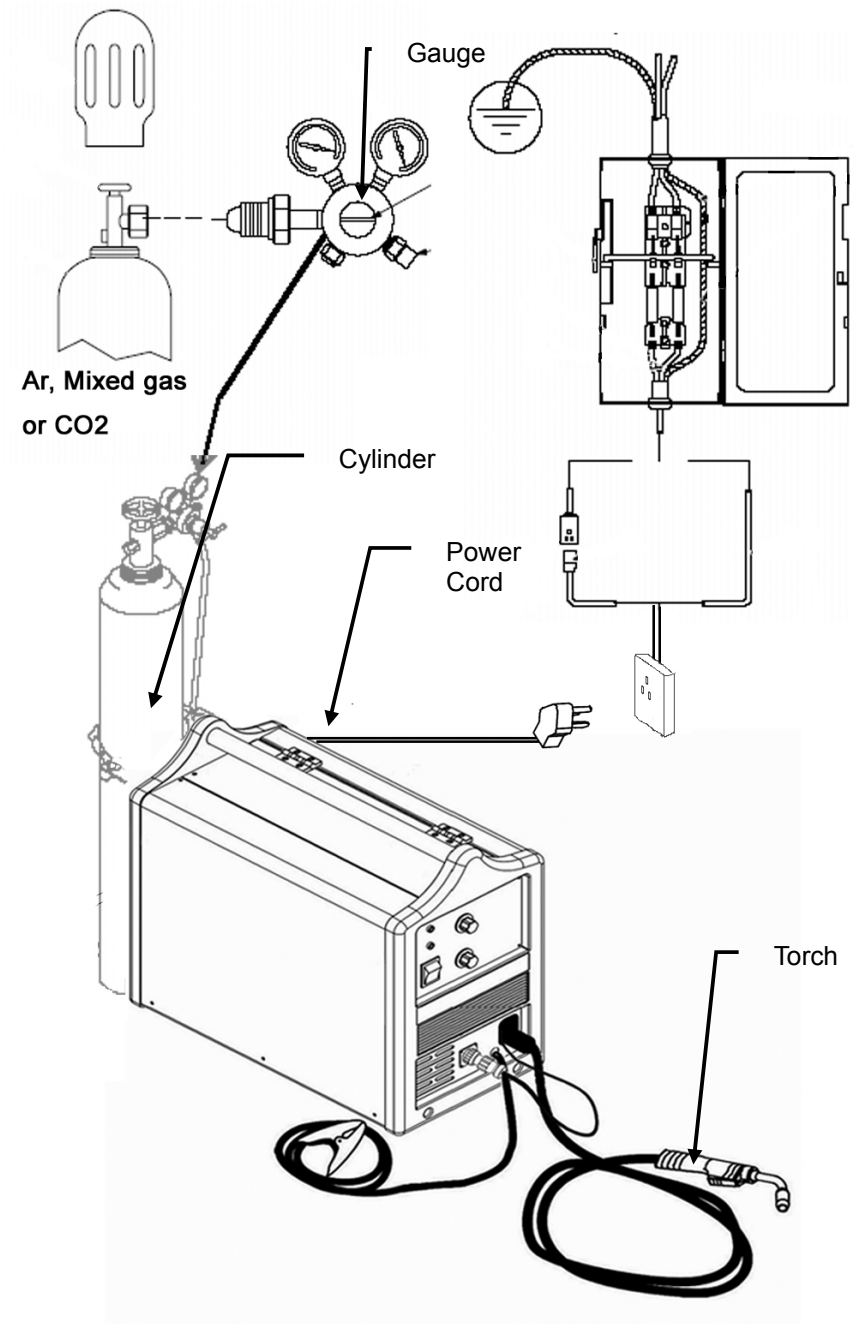
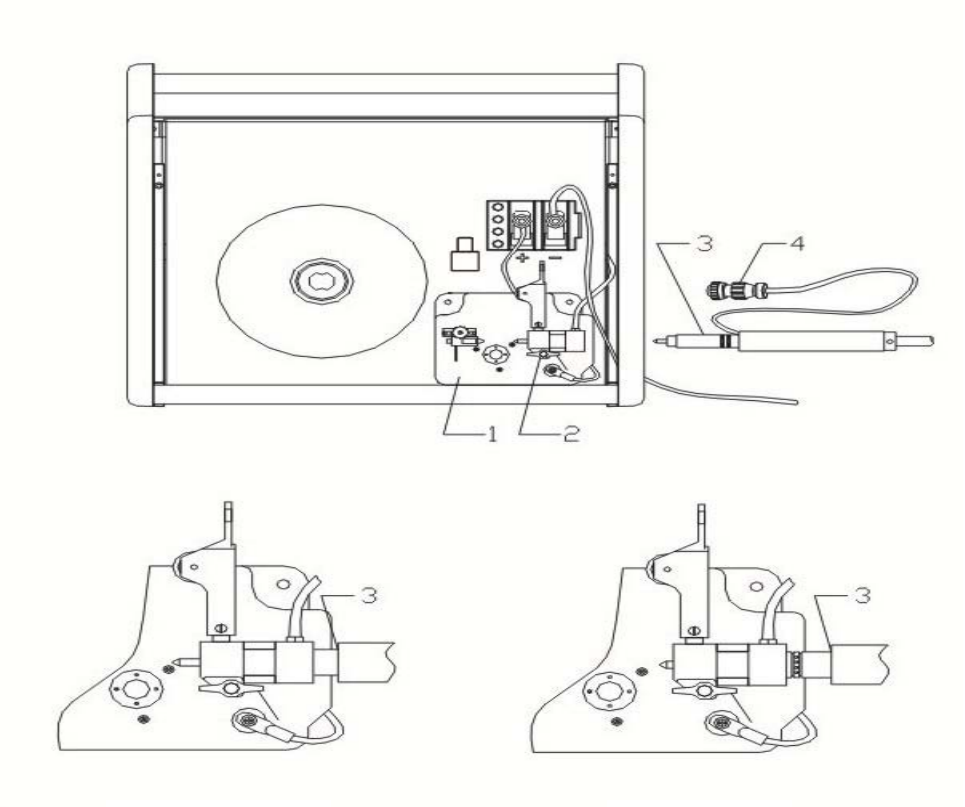


Figure 2.2

2-3. installing welding torch



Correct Incorrect

Figure 2.3

1. Gun Securing Knob
2. Gun End: Loose knob. Insert gun end through opening until it bottoms against drive assembly. Tighten knob.
3. Gun Trigger connector: Insert into receptacle, and tighten. Close door.

2-4. Ground cable installation

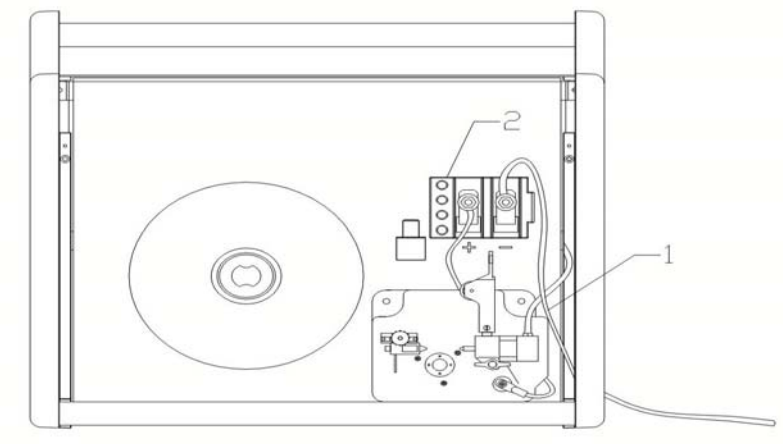


Figure 2.4

1. Ground cable
2. Output Terminal Block
3. Insert ground cable through opening in front panel and route along back of front panel to output terminal block. Close door.

2-5. Process/Polarity Table

Process	Polarity	Cable Connections	
		Cable To Gun	Cable To Work
GMAW－Solid wire with shielding gas	DCEP – Reverse polarity	Connect to positive(+) output terminal	Connect to negative(-)output terminal
FCAW – Self-shielding wire- no shielding gas	DCEN－Straight Polarity	Connect to negative(-) output terminal	Connect to positive(+)output terminal

Table 2.2

2-6. Install procedure

2-6.1. Welding machine should be installed in a stable position and with good ventilation. Avoid direct sun outdoors. Use forklift to move, avoid transport in invert or side position.

2-6.2. Be sure machine is well grounded. Connect the bolt marked “earth ” with earth in network, then connect to network firmly

2-6.3. Before starting a new machine or the machine idled for a period, check the insulation resistance of circuit which is connected to the network. The resistance must be higher than 2.5M Ω; otherwise the machine must be dried.

2-6.4. Connect torch, earth cable, wire, regulator, cylinder according to connection diagram. **Note: Connection hardware must be tightened with proper tools. Do not just hands tighten hardware! A loose electrical connection will cause poor weld performance and excessive heating at the terminal**

block.

2-6.5. Use Φ8 heat-resistant PVC hose connect the flow meter with the gas connection nipple at rear of the machine.

2-6.6. Install wire spool.

4 in (100mm) wire spool:

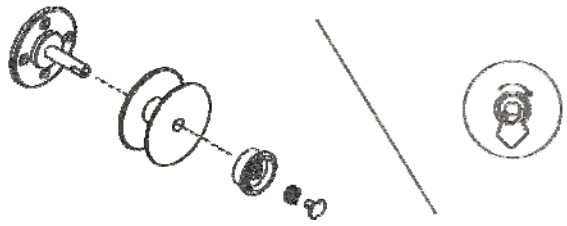


Figure 2.5

8 in (200mm) wire spool:

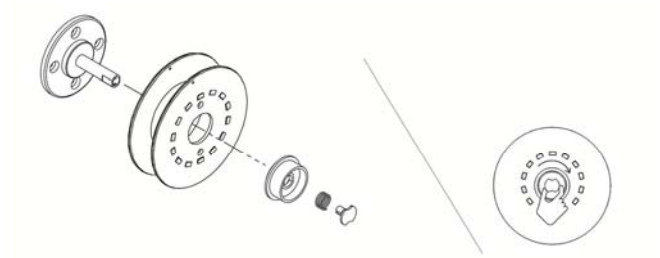


Figure 2.6

Commission the machine after the machine is installed and tested:

- ✶ Release the pressure roller in the wire feeder, push the torch switch, and adjust voltage switch from low to high, Open circuit voltage should rise.
- ✶ Evenly adjust the current knob, the wire feed speed should increase evenly.

2-7. Electric service guide

⚠ CAUTION

WARNING: THIS WELDING MACHINE MUST BE CONNECTED TO POWER SOURCE IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES

AVERTISSEMENT: LE RACCORDEMENT DE CETTE MACHINE DE SOUDAGE Á L'ALIMENTATION DOIT ÉTRE CONFORME AUX CODES D' ÉLECTRICITÉ PERTINENTS

Use 115 volt single phase input, 20 ampere individual branch circuit protected by time-delay fuses or circuit breaker is required.

Extension cord: 14 AWG

Extension length: 8m with 14AWG, 12 AWG for up to 10 m.

MigSonic145

Input voltage(V)	230
Frequency(Hz)	60
Input Amperes at rated output(A)	24
Max recommended standard fuse Rating in Amperes **Circuit breaker, time delay** **Normal operation**	 25 35
Min input conductor size in AWG	14
Min Grounding conductor Size in AWG	14

Table 2.3

2-8. Extension Cable Selection Chart

CAUTION

USE SHORTEST CABLE POSSIBLE

Input Conductor Size in AWG (mm^2)	**Maximum Cord Length allowed in Ft(M)**	
	115V	230V
14(2.08)	23(7)	56(17)
12(3.31)	29(9)	90(27)
10(5.26)	43(13)	131(40)
8(8.36)	72(22)	160(50)
6(13.29)	105(32)	243(74)

Table 2.2

SECTION 3 OPERATION

3-1 Front panel Layout

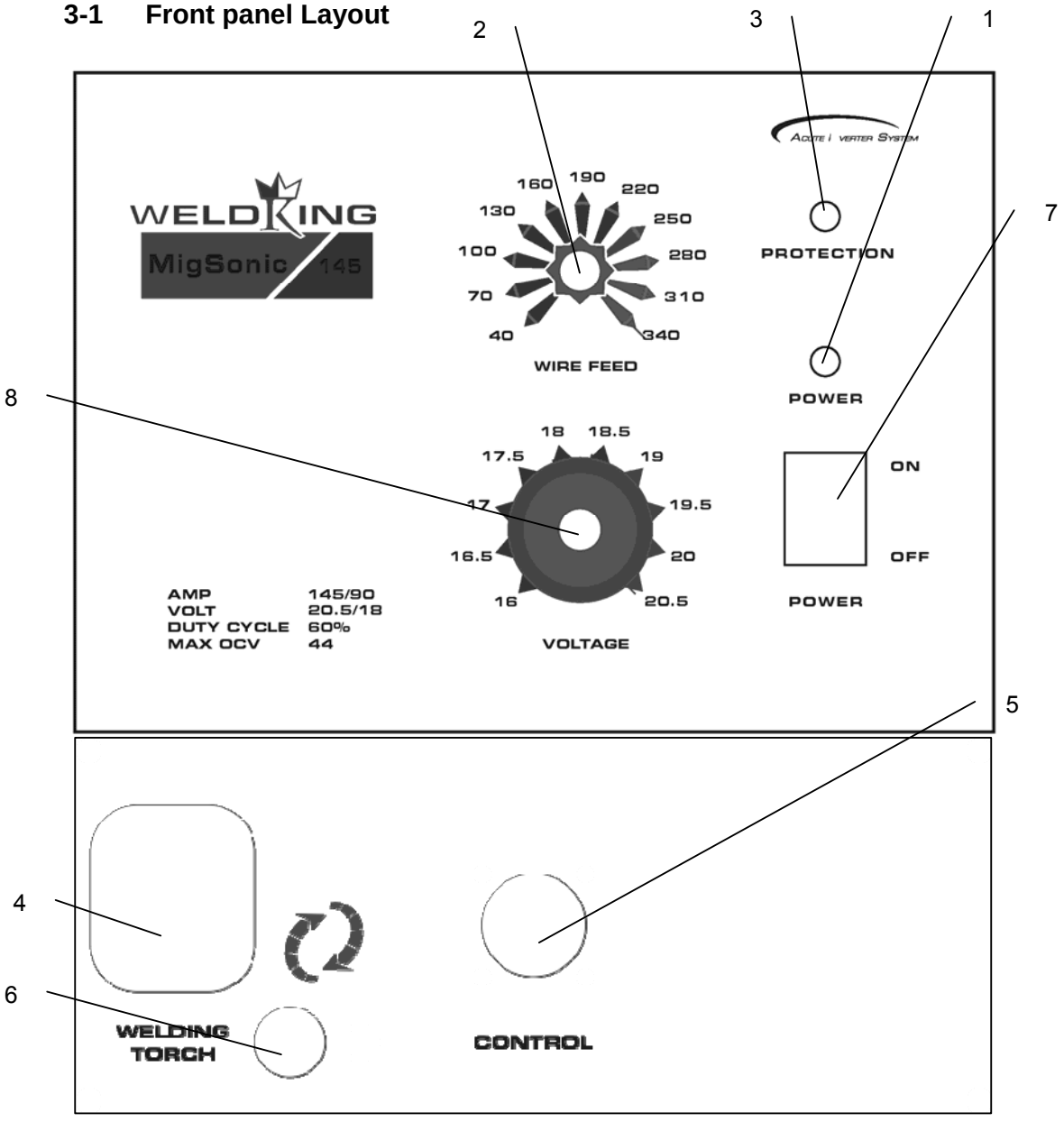


Figure 3.1

1. Power indicator
2. welding current adjust knob
3. Over-heat protection indicator
4. Torch terminal
5. Control receptacle
6. Earth clamp
7. Main switch
8. Voltage adjust knob

3-2 Operation

3-2.1 Check the connection of work piece, earth cable, welding torch, wire feeder, gas cylinder, regulator and hose, make sure they are firm and reliable.

3-2.2 Install the wire spool to the wire spool spin, select correct feeding roller and tip according to the wire diameter. Manually put wire into liner. Set back the pressure roller with proper pressure.

3-2.3 Switch on the power source. Set the welding voltage switch to proper position and current knob to a start value and refine during welding(referring to the voltage/wire feeding speed selection chart)

3-2.4 Turn on the gas valve, adjust gas volume to 3-5L/MIN. Push the torch switch check if wire feed and gas is normal, check if there is gas leaking.

3-2.5 Hold the torch and keep nozzle 8-12mm above the work piece, and tilt 10-20 ° to vertical direction. Aim wire to the welding seam.

3-2.6 Push torch switch, after arc is ignited, move the torch along seam evenly while keeping the stick-out. Fine tune the welding parameter to obtain exquisite welding seam. Release the torch switch to finish a welding cycle.

3-2.7 Adjust the crater fill knob located above the polarity stud inside the machine (see Figure 3.2) if there is a crater left at the end of the welding seam. This knob Adjust current decline time (in second) after the gun switch is released.

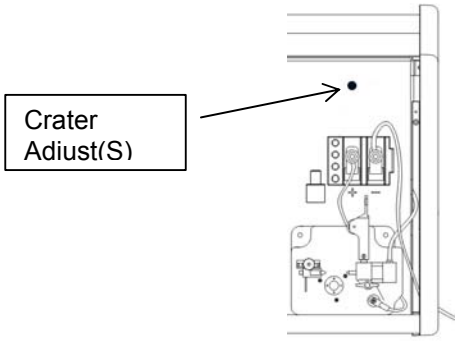


Figure 3.2

3-2.8 After finish operation, turn off the gas valve, loose the pressure handle at wire feeder, push torch switch to clear the residual gas in the regulator. At the end, turn off welding power source and wall switch.

3-3 Voltage/Wire speed selection chart

Wire feed speed ⟶ **200/19** ⟵ ∅ Voltage "V"

- : setting not recommended

The setting in the following chart is just for start only and can be fine tune during welding.

MIGSONIC145

Material	**Steel**				**Stainless steel**	
Wire type	Solid ER70S-6(DCEP)		Flux core E71T-1(DCEN)		ER308,ER308L,ER 308LSi(DCEP)	
Wire size (in) (mm)	0.023" 0.6	0.035" 0.9	0.030" 0.8	0.035" 0.9mm	0.023" 0.6	0.035" 0.9
3/16" (4.8mm)	-	-	-	250/19.5	-	-
1/8" (3.2mm)	310/21	280/19.5	280/19.5	250/19.5	320/21.5	300/21
14ga. (2.0mm)	200/18.5	160/18.5	120/18.5	100/18.5	230/21	210/20
16ga. (1.6mm)	120/17.5	100/17.5	80/17.5	70/17.5	120/19	110/18
18ga. (1.2mm)	80/17.5	70/17	50/17.5	45/17	100/17.5	90/16.5
20ga. (0.9mm)	60/16	50/15.5	-	-	80/16.5	80/16
22ga. (0.8mm)	50/15	40/14	-	-	-	-
24ga. (0.6mm)	40/13	35/13	-	-	-	-

Table 3.1

SECTION 4 TROUBLE SHOOTING

No.	Problem		Cause	Solution
1	Power Indication lamp does not on after switch on the main switch		Loose contact at input lead	Check contact situation
			Lamp malfunction, poor contact	Check contact situation. Replace lamp
			Main switch malfunction	Check switch, replace if necessary
2	Cooling fan stops to rotate after machine has worked a period	Power indication lamp on	Cooling fan circuit malfunction	Check fan circuit
			Cool fan failure	Check fan, replace if necessary
		Power indication lamp off	See No. 1	
3	No gas flow out after pushing the gun trigger		Gas pressure not enough	Check gas pressure
			Poor gas hose connection	Check gas connection
			Gun trigger failure	Check gun trigger
			Solenoid valve failure	Check and replace Solenoid valve
			Gas passage problem	Check and repair the gas

				passage
			Torch gas hose problem	Check and repair torch cable
			Control circuit failure	Replace circuit board
			Control transformer failure	Replace transformer
4	Failure of arc to ignite or does not ignite properly		Fuse melt or poor contact	Check and repair
			Main power switch failure	Check, repair, replace
			Control circuit board failure	Check and repair the circiut board
			Welding cable broken or poor contact	Check the connection
			Gun trigger wire broken	Replace cable
			Gun cable broken	Replace cable
			Voltage adjustment knob failure or poor contact	Check, repair, replace
			Control transformer failure	Check, repair, replace
			Main transformer failure or poor contact	Check, repair, replace
5	Unstable arc		Gas hose not installed properly, gas mixed by air	Connect the gas hose firmly
			Gas not pure	Changes gas

		Wire liner or gun cable broken and leak cause insufficient gas volume.	Check, repair, replace
		Wire pressure not setup properly	Adjust pressure
		Wire feed speed not stable	See No.9
		Control circuit failure	Check, repair, replace circuit board
		Gas heating failure	Check 20A Fuse, repair, replace
		the work piece surface contaminated by oil	Clean the workpiece surface
		Poor contact inside the gun	Check, repair, replace
6	Arc ignited but the wire does not melt	Rectifier tube failure	Check, replace
		Output reactor failure	Check, replace
		Output capacitor failure	Check, replace
7	Wire does not feed while the feed roller is rotating	Wire pressure not proper	Adjust pressure
		Wire liner or contact tip jammed	Check, repair, replace
		Used wrong groove at the feeding roller	Use the right groove
8	Can not stop the gas	Solenoid valve contaminated	Check, repair, replace solenoid
		Contactor failure	Check, replace the contactor

		Control board failure	Check, repair, replace
9	Wire feeding not stable	Wire out of feeding roller groove	Put wire back
		Wire feed pressure not set properly	Adjust pressure
		Feeding roller deformed	Check and replace
		Pressure roller deformed	Check and replace
		Feeding motor failure	Check and replace
		Current adjust potential meter failure	Check and replace
		Circuit board plug socket not properly contacted	Check and repair or replace
		Control circuit failure	Check and repair or replace
		Welding hose deformed	Check and replace
		Input voltage fluctuated	Use under rated input voltage
10	Power supply switch jump	Rectifier short circuit	Check and replace
		Main transformer short circuit	Check and replace
		Control transformer short circuit	Check and replace
		Solenoid valve short circuit	Check and replace

		Cooling fan short circuit	Check and replace
11	Overheat light on	Work excess the rate duty circle	Use under rate duty circle
		Input voltage is too high	Use under rate input voltage

Table 4.1

SECTION 5 MAINTENANCE

5.1. Maintenance

Periodic maintenance is necessary for keeping the machine work properly.

⚠ CAUTION

DISCONNECT POWER INPUT AND SWITCH OFF THE MAIN POWER SWITCH BEFORE START OF MAINTENANCE.

Regular Check and Inspection	6 Month Routine Maintenance
• Clean spatter inside the nozzle when continuously use the machine. • Check liner frequently, change if it has been contaminated by oil or worn out. • Check and change broken contact tip and nozzle to avoid damage to the torch and machine. • Check the function of all switches. • Check if the fan rotates properly and if there is air venting out from back of the machine • Pay Attention to the abnormal vibration, noise, smell and gas leakage during operation • Check if the welding cables are over heated? • Check if the cable connections are over heated? • Check if the cable is connected firmly and properly, if it is broken and cause bad insulation? • Check the cover grounded properly	• Blow out with dry clean pressure air or vacuum inside machine, especially transformer coil and power component. • Check the electric connection of input/output bar to avoid bad contact caused by loose or rusted screw. • Check the lubrication of the gear box in the feeder, replace or fill lubricates oil if necessary. • Check and clean the oil or other contamination in the feeding roller and feeding tube. If the V grooves have worn out change feeding roller immediately to avoid slipping or unstable feeding

Table 5.1

5.2. Safety precaution

5.2.1. Welders must be equipped with welding mask, gloves and tie the sleeves and collar properly. There should be an arc shield around welding field to protect others from arc shock.

5.2.2. Do not weld near flammable, explosive materials or gases.

5.2.3. Gas cylinder must be located at a safe and steady place to avoid injury others.

5.2.4. Keep finger, hair and clothing away from the rotating fan.

5.2.5. The power source must be grounded when welding.

5.2.6. Welding machine should not work in a flammable and toxic environment, avoid moisture, rain, and do not directly expose to sun.

5.2.7. Periodically maintain the machine and clean the dust inside.

NOTES

SECTION 6 PARTS LIST

Item	Order No.	Description	Note	Quantity
17	Y2517036	Spool holder	1Kg/5Kg	1
18	Y2508007	Knob	RN-110Z（black/red）	3
19	Y2517034	Plastic wiring terminal	Plastic control connector	1
20	Y0401006	luminescent diode	∅5 yellow	1
21	Y0401005	luminescent diode	∅5 red	1
22	Y1101001	Toggle switch	R210-C5L-BR(25A)	1
23	Y2517038	Control receptacle	AANWAN-4 hole	1
24	B0201050	Earth clamp 005	10mm, 2/3m	1

Table 7.1

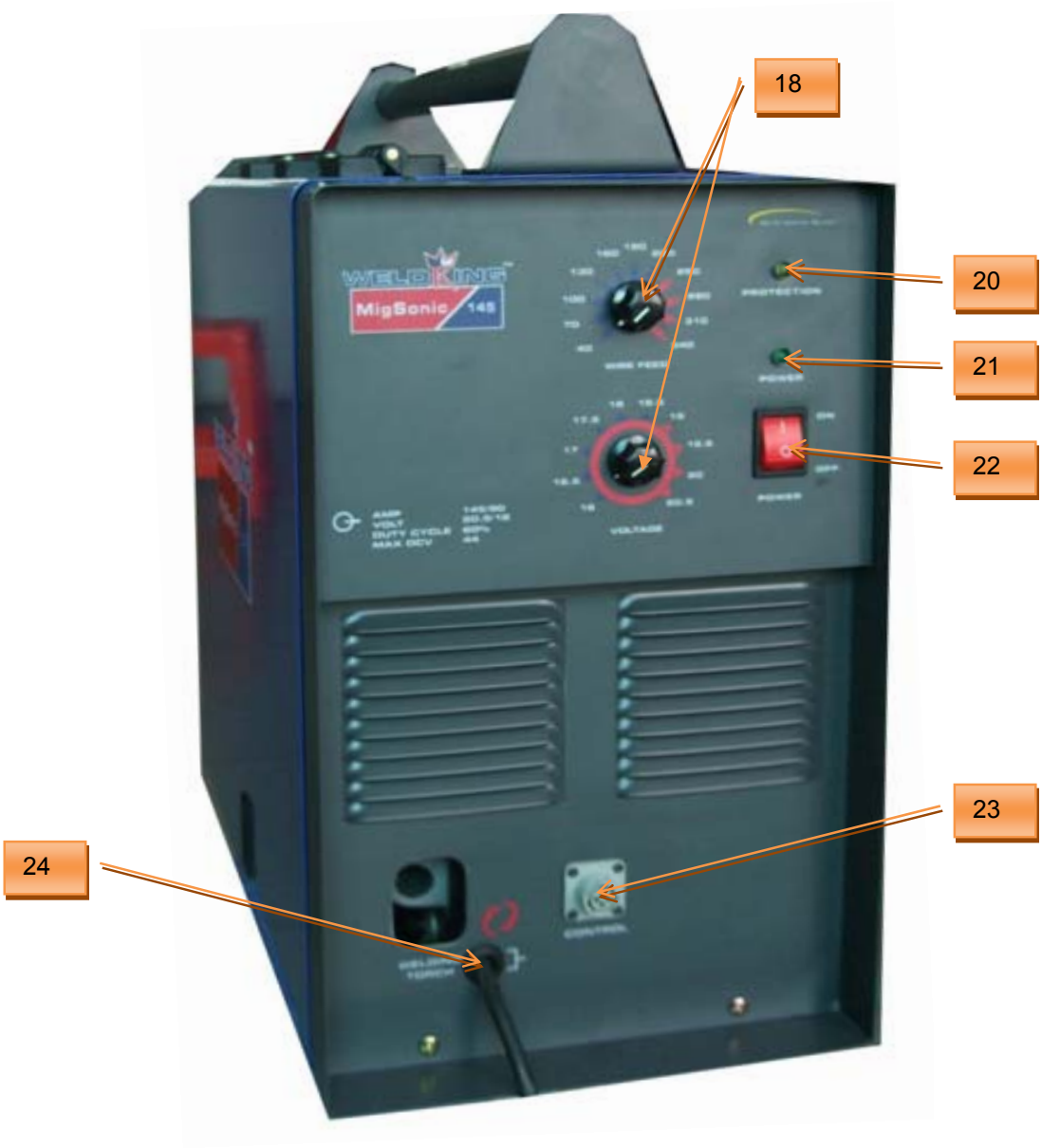


Figure 7.1

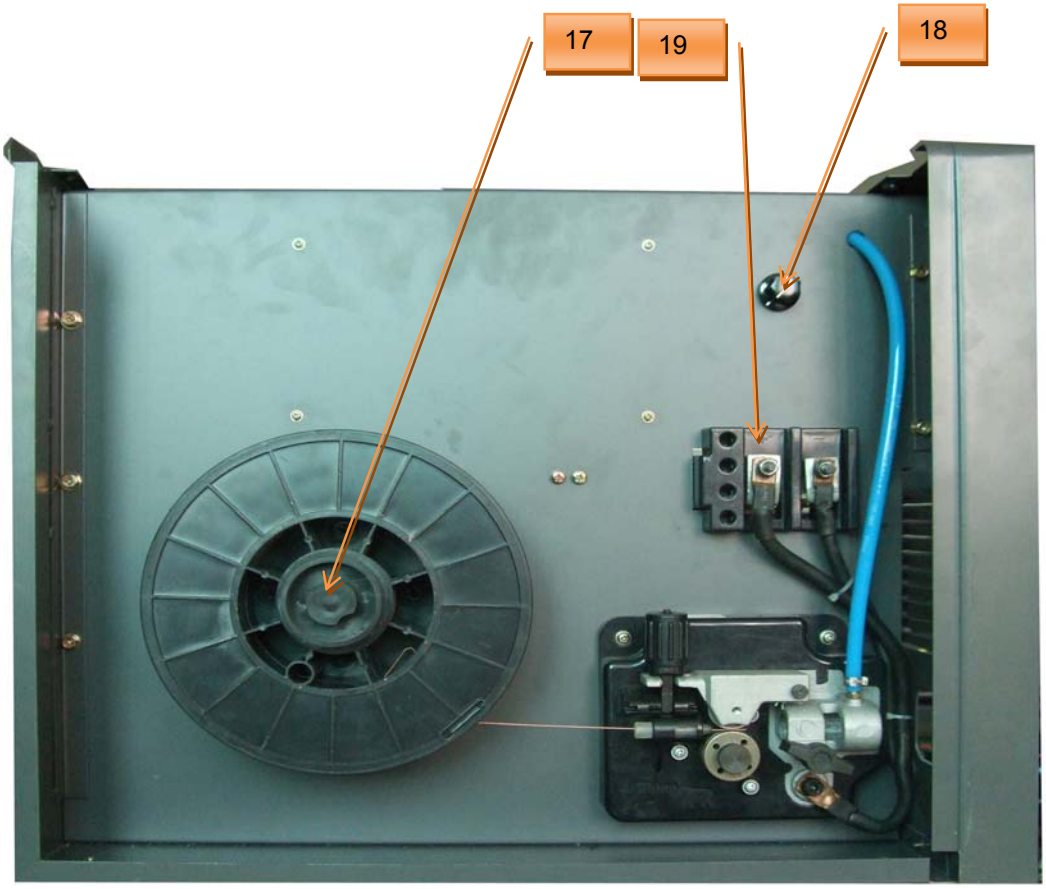


Figure 7.2

Wire feeder (HANWAN-4D/24V) , Order No. 2611017

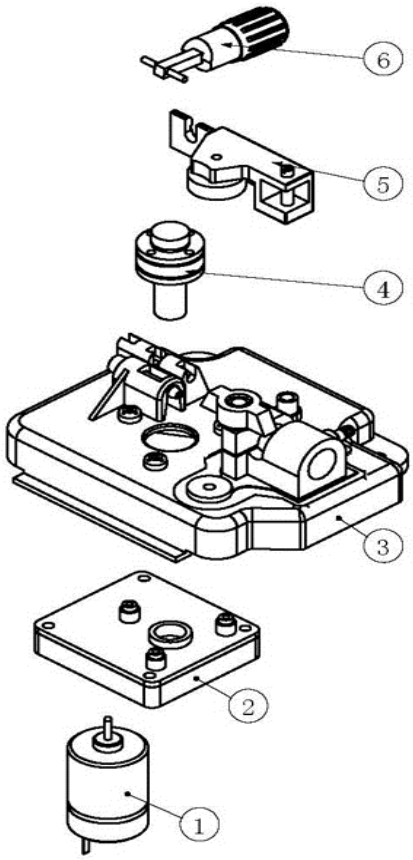


Figure 7.3

ITEM	DESCRIPTION	ORDER NO.	QUANTITY
1	Electric Machinery	26110171	1
2	Gearbox	26110172	1
3	#18 Bracket	26110173	1
4	Roller(0.6/0.8mm/0.9)(.023/.030.035)	Y2517047	1
5	#18 Pressure shell components	26110175	1
6	#6 Pressure	26110176	1

WeldKing™ NT1 Mig Torch, Order No. 07000422

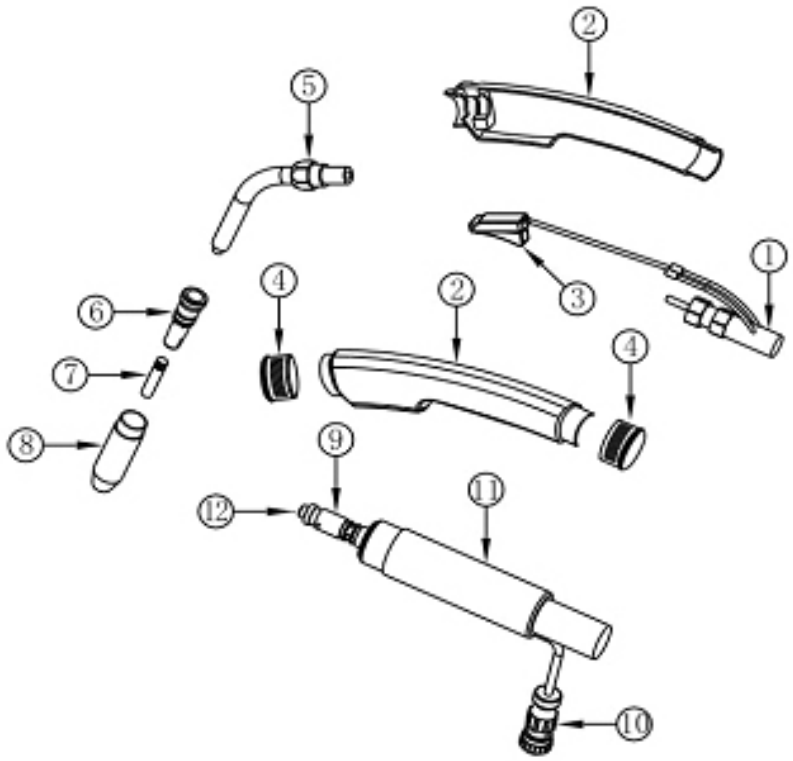


Figure 7.4

Nozzles

ITEM	DESCRIPTION	ORDER NO.	
1	Nozzle Self Insulated	21-37	A
2	Nozzle Self Insulated	21-50*	A
3	Nozzle Self Insulated	21-62	A
4	Nozzle Self Insulated	21-37F	A
5	Nozzle Self Insulated	21-50F	A
6	Nozzle Self Insulated	21-62F	A
7	Nozzle Self Shielding	LA8201	B

Contact Tips

ITEM	DESCRIPTION	ORDER NO.	
1	Contact Tip 0.023”/0.6mm Ecu	11-23	C

2	Contact Tip 0.030”/0.8mm Ecu	11-30*	C
3	Contact Tip 0.035”/0.9mm Ecu	11-35	C
4	Contact Tip 0.040”/1.0mm Ecu	11-40	C
5	Contact Tip 0.045”/1.2mm Ecu	11-45	C

Liners

ITEM	DESCRIPTION	ORDER NO.	
1	Steel Liner 0.030”-0.035”/0.8-0.9mm X15ft	42-3545-15	D
2	Teflon Liner 0.030”-0.035”/0.8-0.9mm X15ft	42T-3035-15	D

* Default

Component

ITEM	DESCRIPTION	PART No.	QTY
1	Gun &Cable Assembly	2011008	1
2	Gun Handle (Left ＆Right)	2011009	1
3	Trigger Assembly	2011010	1
4	Hook	2011011	1
5	Locking Nut	2011012	1
6	Gas Diffuser	51	1
7	Contact Tip.030	See above	1
8	Gas Nozzle	See above	1
9	Control Assembly	2011059	1
10	Control Wire Cord	2011016	1
11	Cable Boot	2011017	1
12	Liner 0.6-0.8 / 10FT	See above	1

NOTES

SECTION 7 WARRANTY POLICY

Malo Welding Products Ltd., Warranty Policy

Effective August 1st, 2004, revision at April 1st, 2011

LIMITED WARRANTY - Subject to the terms and conditions below, Malo Welding Products Ltd.(WELDKING™) endeavors to provide high quality products and product support to its customers and therefore backs up all of its new products purchased from Malo Welding Products Ltd.(WELDKING™) or any authorized Malo Welding Products Ltd.(WELDKING™) distributor/service center after the effective date of this limited warranty and is free of defects in material and workmanship at the time it is shipped. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE OF THE MALO WELDING PRODUCTS LTD.(WELDKING™) WARRANTY. MALO WELDING PRODUCTS LTD.(WELDKING™) DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING THE PRODUCTS, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IN THE UNITED STATES, SOME STATES DO NOT ALLOW THE EXCLUSION OF THE IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

Malo Welding Products Ltd.(WELDKING™) shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original retail purchaser, or one year after the equipment is sent to a North American distributor.

(1) 3 Years - Parts and Labor

Power Sources

Wire Feeders

(2) 90 Days - Parts (No Labor)

Guns

Remote Controls

Accessory Kits

Replacement Parts (No labor)

Malo Welding Products Ltd.(WELDKING™)'s limited Warranty shall not apply to:

(1) Consumable components; such as contact tips, cutting nozzles, contactors, brushes, slip rings, relays or parts that fail due to normal wear.

(2) All limited warranties are void for, and Malo Welding Products Ltd.(WeldKing™) does not warrant in any way, any product that evidences misapplication, improper installation, abuse, lack of maintenance, negligence in use or care, abnormal use, alteration of design, use of incompatible or corrosive chemicals, and/or servicing, installation of parts, or repairs by anyone other than Malo Welding Products Ltd.(WELDKING™) or a Malo Welding Products Ltd.(WELDKING™) authorized distributor or service center. Malo Welding Products Ltd.(WELDKING™) may make changes in products it manufactures and markets at any time; these changes are made without obligation to change, retrofit, or upgrade any product previously sold or manufactured.

MALO WELDING PRODUCTS LTD.(WELDKING™)'S PRODUCTS ARE FOR COMMERCIAL/INDUSTRIAL USE AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING/PLASMA CUTTING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at Malo Welding Products Ltd.(WELDKING™)'s option: (1) repair; or (2) replacement; or, where authorized in writing by Malo Welding Products Ltd.(WELDKING™), in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. No compensation or reimbursement for transportation costs of any kind will be allowed.

LIMITATION OF DAMAGES: THE REMEDY OF REPLACEMENT OR REPAIR OF ANY DEFECTIVE GOODS SHALL BE THE EXCLUSIVE REMEDY UNDER ANY WARRANTY MADE BY MALO WELDING PRODUCTS LTD.(WELDKING™), WHETHER EXPRESS OR IMPLIED. IN NO EVENT SHALL MALO WELDING PRODUCTS LTD.(WELDKING™) BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, PROPERTY DAMAGES, OR PERSONAL INJURIES.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MALO WELDING PRODUCTS LTD.(WELDKING™), IS EXCLUDED AND DISCLAIMED BY MALO WELDING PRODUCTS LTD.(WELDKING™).

If any provision or portion of this limited warranty policy is found to be unenforceable, then the remaining provisions and portions shall remain valid and enforceable. If any provision or portion of this limited warranty policy is found to be limited by law, then that provision or portion shall be construed to make it effective within the bounds of law.

To obtain warranty service you must active your product(s)'s warranty online at weldking.com or mail the product registration card included in the package to Malo Welding Products Ltd.(WELDKING™) right after the purchase. When there is a warranty issue, return the defective welding machine or plasma cutting machine along with proof of purchase to any WeldKing™ Authorized Warranty Depot. For the location of the nearest WeldKing™ Authorized Warranty depot or for service information in the United States or Canada, please telephone toll free: 1-866-686-5088 or visit www. weldking.com (USA & Canada).available, but may vary from province to province

SECTION 8 AUTHORIZED SERVICE CENTER

Please go to our website www.weldking.com to fill the warranty registration form. Malo Welding Products Ltd. will not distribute of disclose customer's private information to any third party and will not sent promotion material to the customer.

Find your nearest warranty center at:

http://www.weldking.com/servicelocations.aspx

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